

CONSTITUTION MATERIALS LIST

The RoHS directive, REACH regulation, and other laws and regulations related to the management of environmentally hazardous substances come into effect. When developing products, the global environmental load must be considered. ROHM pursues green procurement and endeavors to increase the detection accuracy of chemicals contained in parts and procured materials while at the same time placing great importance on the internal chemical management system that was built to ensure that no prohibited substances are procured, used, or shipped in order to provide a steady supply of worry-free products.

TR-TO220FM-JE_Rev.6

Type	Package Code	ROHM Package	Mass (mg)	Part No.
Transistor	-	TO-220FM	1870.6660	-

No	Part Name	Weight (mg)	Substance Name	CAS No	Weight (mg)	Portion vs. Products	Portion vs. Part Name
1	Mold compound	1058.9150	Silica (crystalline)	14808-60-7	807.3168	43.16%	76.24%
			Epoxy resin	29690-82-2	129.0817	6.90%	12.19%
			Phenol-formaldehyde resin	9003-35-4	75.2889	4.02%	7.11%
			Epoxy resin bromide	40039-93-8	21.4960	1.15%	2.03%
			Antimony trioxide	1309-64-4	21.4960	1.15%	2.03%
			Organic phosphorus compounds	-	3.2826	0.18%	0.31%
			Bismuth compounds	-	0.9530	0.05%	0.09%
			<i>Subtotal</i>		<i>1058.9150</i>		<i>56.61%</i>
2	Lead frame (Base material)	778.4650	Copper (Cu)	7440-50-8	777.6860	41.57%	99.90%
			Iron (Fe)	7439-89-6	0.7790	0.04%	0.10%
			<i>Subtotal</i>		<i>778.4650</i>		<i>41.61%</i>
3	External plating	8.4270	Tin (Sn)	7440-31-5	8.1320	0.43%	96.50%
			Silver (Ag)	7440-22-4	0.2530	0.01%	3.00%
			Copper (Cu)	7440-50-8	0.0420	0.00%	0.50%
			<i>Subtotal</i>		<i>8.4270</i>		<i>0.45%</i>
4	Die	17.1620	Silicon (Si)	7440-21-3	16.8970	0.90%	98.46%
			Nickel (Ni)	7440-02-0	0.1437	0.01%	0.84%
			Silver (Ag)	7440-22-4	0.0850	0.00%	0.50%
			Gold (Au)	7440-57-5	0.0363	0.00%	0.21%
			<i>Subtotal</i>		<i>17.1620</i>		<i>0.92%</i>
5	Die attach	5.9500	Tin (Sn)	7440-31-5	5.7420	0.31%	96.50%
			Antimony (Sb)	7440-36-0	0.2080	0.01%	3.50%
			<i>Subtotal</i>		<i>5.9500</i>		<i>0.32%</i>
6	Bonding wire	1.7470	Aluminum (Al)	7429-90-5	1.7470	0.09%	100.00%
			<i>Subtotal</i>		<i>1.7470</i>		<i>0.09%</i>
			<i>Total</i>	-	<i>1870.6660</i>	<i>100%</i>	<i>-</i>

Note

*2 : It is exempted from the RoHS, because of the high melting point solder.

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